SOIL TREATMENT

an aid in TERMITE CONTROL

Leaflet 324
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UNITED STATES DEPARTMENT
OF AGRICULTURE

SOIL TREATMENT an Aid in TER

The damage to buildings in our country caused by subterranean termites amounts to many millions of dollars annually. Although such losses are more prevalent in the South than in the North, termites are capable of causing structural damage in any State. Because of this, infestations should be checked wherever they are found.

HOW TO DETECT INFESTATIONS

Telltale signs of subterranean termites are the earthen tunnels or runways built by these insects over the surfaces of foundation walls to reach the wood above. When feeding in wood, the pearly-white worker termites make galleries that follow the grain. These galleries seldom show on the wood surface, but may be found by removing weatherboarding or trim boards or by probing with an ice pick or a knife the places where one suspects the insects are at work. Termites do not push out sawdustlike material from their galleries.

Another sign of termites is the swarming of winged adults early in the spring or fall. Each adult has four silvery wings, which are of equal length and twice as long as the body. Numerous detached wings may be found where swarming has taken place, even after the swarm has disappeared.

HAZARDS OF INFESTATION

The hazards of termite infestation are greatest beneath buildings having (1) a concrete slab on the ground, (2) a crawl space with inadequate clearance, ventilation, and drainage, or (3) a basement with enclosed porches, sun parlors,

and terraces, where filled earth comes very close to the building timbers. In slab-on-ground construction and in basementless buildings, the hazard is apt to be greater along the inside of the foundation, while in buildings with basements, the opposite is apt to be true.

PRINCIPLE OF CONTROL

In attempting to control termites in a building, the main thing to remember is to break the contact between the termite colony in the soil and the woodwork in the building. This can be done by (1) making the necessary changes in structure to block the passageways from soil to wood, and removing all wood supports, formboards, debris, etc., from the ground, (2) by chemically treating the soil, or (3) by using a combination of these methods.

Every case of termite trouble requires individual consideration. The suggestions given in this leaflet relate principally to some of the more simple soil treatments. When properly applied, they should give several years of remedial protection.

METHODS OF TREATING

Concrete slab on ground.—The control of infestations occurring beneath concrete floor slabs on the ground is very difficult and sometimes hazardous. For this reason, it is not advised as work to be done by the average homeowner. This is especially true where radiant heat is concerned, since pipes are apt to be buried in the concrete and may be damaged

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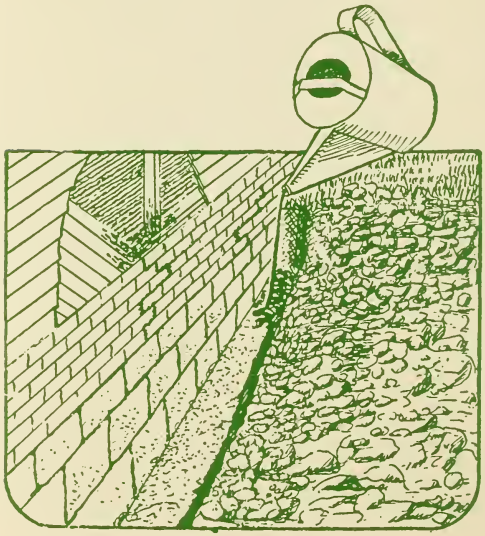
when drilling holes in the floor through which a soil poison is poured to treat the ground below.

Where pipes are not present in the slab, holes are usually made one-half inch in diameter, about 1 foot apart and 6 inches from the wall. An alternative method consists of drilling the holes through the foundation walls, so that the chemical can be introduced into the ground just below the slab. The holes are made about 5 feet apart and the chemical is distributed best by the use of considerable pressure.

Along the exterior foundation wall, make a trench 6 to 8 inches wide and about a foot deep, but do not go below the top of the footing. Where the footing is deeper than the trench, make holes along the bottom of the trench, 1 inch in diameter and about a foot apart, as is mentioned below under basementless houses.

Basementless houses.—To control infestations occurring along interior walls or around supporting piers of basementless houses, dig a



trench 6 to 8 inches wide and a few inches deep, next to the walls or piers, taking care not to go below the top of the footing. If the land slopes or the footing is more than 12 inches deep, make crowbar, pipe, or rod holes about an inch in diameter and a foot apart, from the bottom of the trench to near the footing. This will help to distribute the chemical evenly along the wall.

The trench along the exterior foundation wall is also made 6 to 8 inches wide, but about a foot deep. If needed, holes are also made in the trench bottom, as described for the trench along the interior wall.

Basement houses.—Where the termites are coming from beneath the concrete floor in the basement, remove any wood that may extend into the ground, poison the soil, and then seal cracks or holes through which termites may enter. Fill large ones with a dense cement mortar and small ones with a roofing-grade coal-tar pitch. Where the infestation is located between the floor and wall (expansion joint) or around a furnace, make a series of 1-inch holes, spaced about 1 foot apart, through which a chemical can be poured. Holes along a wall should be made about 6 to 8 inches from it, so as to clear the footing and reach the soil beneath.

Where the infestation occurs along the exterior foundation wall in houses having full basements, it is necessary to treat the soil to a greater depth than is required for the other types of houses. The trench is prepared in the same way, but the pipe or rod holes should extend down to the top of the footing to aid proper distribution of the chemical to all parts of the wall. This is especially important in masonry foundations where numerous mortar joints are present below grade—some of which may be susceptible to termite attack.

CHEMICALS TO USE AND HOW TO PREPARE THEM

The five chemicals recommended are water emulsions. Unlike oil solutions, they will not injure plants when used along exterior foundation walls. Neither will they creep up walls and damage floors, as oil may, when applied along the interior of foundations. The concentrations recommended allow a margin of safety and provide protection for several years.

CHLORDANE, 1-percent emulsion

Chlordane is available as 46–48, or 72–74 percent water emulsion concentrates. The 1-percent emulsion is prepared by adding 48 gallons of water to 1 gallon of the 46-percent concentrate, or 99 gallons of water to 1 gallon of the 72-percent concentrate. The ratio is 1 to 48, and 1 to 99, respectively, whether the measure is in gallons or in cupfuls.

DIELDRIN, 0.5-percent emulsion

This chemical is available as an 18-percent emulsion concentrate, containing 1.5 pounds of technical dieldrin per gallon. To prepare an 0.5-percent strength, add 36 gallons of water to each gallon of concentrate.

BENZENE HEXACHLORIDE (BHC), 0.8-percent emulsion

BHC is frequently sold as a liquid concentrate containing 12-percent gamma isomer (the part toxic to insects). The 0.8-percent emulsion is prepared by diluting 1 gallon of the concentrate with 15 gallons of water.

ALDRIN, 0.5-percent emulsion

The concentrate contains either 2 or 4 pounds of technical aldrin per gallon. For an 0.5-percent emulsion, add 1 gallon of the 2-pound concentrate to 47 gallons of water, or 1 gallon of the 4-pound concentrate to 95 gallons of water. The rate of dilution is 1 to 47, and 1 to 95, respectively, regardless of the unit of measure used.

HEPTACHLOR, 0.5-percent emulsion

The concentrate contains either 2 or 3 pounds of the actual chemical per gallon. For a 0.5-percent emulsion add 1 gallon of the 2-pound concentrate to 48 gallons of water, or 1 gallon of the 3-pound concentrate to 72 gallons of water.

RATE OF APPLICATION

Slab-on-ground houses.—Apply at least 2 gallons of the diluted emulsion per each 5 linear feet of wall, through holes made in the floor or foundation, to reach the infested soil. Treatment around the entire slab and around other openings left for plumbing, etc., is advised. Apply the emulsion at the same rate in the trench made along the exterior foundation walls, if the footing is not more than 15 inches deep. If deeper in some places, apply as directed below for crawl-space houses.

Crawl-space houses.—Apply 2 gallons of the diluted emulsion per each 5 linear feet of trench made along the interior of the foundation walls, or around piers or other materials connecting the ground with wood above. Along the exterior foundation walls, including the part adjacent to entrance platforms, porches, sunparlors, etc., apply the chemical at the same rate for each foot of depth from the surface to the footing. Thus, if the footing is 2 feet deep in some places, increase the dosage to 4 gallons of the chemical per each 5 linear feet of trench, or if it is 5 feet deep, use 10 gallons of the chemical per linear unit. The enclosed areas adjacent to the foundation wall (entrance platforms, sunparlors, etc.), should be either trenched along the foundation and treated, or have holes bored through the slabs and the chemical applied through them.

Basement houses.—Where it is necessary to treat through the basement floor, apply the chemical in the same manner and at the same rate as recommended for treating the slab-on-

ground house. When treating along the exterior of the foundation wall, use the rate mentioned for the crawl-space house.

Voids in unit masonry foundations.— Where termites have infested the voids in the walls or piers, make holes in the mortar joints in the lower part of the wall or pier near the floor and apply the chemical at the rate of 1 gallon per 5 linear feet of wall, or around the pier.

APPLYING CHEMICALS IN TRENCHES

Pour or sprinkle some of the chemical at the bottom of the trench. Cover with a layer of soil about 6 inches thick. Pour or sprinkle more of the chemical on top of this soil layer. Mix the chemical thoroughly with this layer. Tamp well. Continue to add more layers of soil, mix with chemical as before, and tamp until the trench is filled. Do not apply chemicals to water-soaked or frozen soils, because the chemicals will not be well distributed and the desired control may not be obtained.

CAUTION

The chemicals mentioned in this leaflet are poisonous to man and other warm-blooded animals and must be handled with care. Do not permit them to come in contact with your skin. Wear rubberized gloves for protection. Where the poison is being applied with pressure through holes in walls and piers, use a cellulose acetate face guard so that the chemical cannot splash back onto your face. If contact with the soil poison occurs, wash the skin immediately with warm soapy water. When the chemical is being applied in an enclosed area, provide a free circulation of air. Never apply these chemicals in places where they might be leached from the soil and enter wells that supply drinking water. Keep children and pets away from areas where these poisons are being prepared and used.

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